

Remarks

Claims 1-146 are pending in the application. Claims 130-141 have been cancelled, claims 1 and 44 have been amended and claims 142-151 have been added. Accordingly, claims 1-129, and 142-151. Accordingly, claims 1-29 and 142-151 will be pending in the application upon entry of this Amendment and Response.

Support for the amendment of claims 1 and 44 can be found throughout the specification and claims as originally filed. In particular, claims 1 and 44 have been amended to recite "said analog further comprising a radioactive isotope that is bonded to a carbon atom of the analog." Support for this amendment can be found in the specification at least, e.g., on page 12, lines 25-26 and on page 13, lines 3-4. Claims 1 and 44 have also been amended to recite that "m is 1-10." Support for this amendment can be found in the specification at least, e.g., on page 10, line 1; in Example 1; and in Figures 1 and 9. No new matter has been added by the amendments.

Claims 147-151 are new. Support for these claims can be found throughout the application and claims as originally filed. In particular, support can be found at least, e.g., in Examples 1 and 8; and Figures 1 and 9.

Claims 130-141 have been canceled without prejudice or disclaimer. Applicants respectfully reserve the right to pursue any non-elected, canceled or otherwise unclaimed subject matter in one or more continuation, continuation-in-part, or divisional applications.

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It is submitted that the claims, herewith and as originally presented, are patentably distinct over the prior art cited by the Examiner, and that these claims were in full compliance with the requirements of 35 U.S.C. § 112. The amendment of the claims, as presented herein, is not made for purposes of patentability within the meaning of 35 U.S.C. §§ 101, 102, 103 or 112. Rather, this amendment is made simply for clarification and to round out the scope of protection to which Applicants

are entitled. Furthermore, it is explicitly stated that the amendments made herein should not give rise to any estoppel.

Reconsideration and withdrawal of the objections to and the rejections of this application in view of the amendments and remarks herewith, are respectfully requested, as the application is believed to be in condition for allowance.

Restriction/Election Requirement

Applicants take this opportunity to thank the Examiner for the rejoinder of the claims of group III with those of elected group I.

Objection to the Information Disclosure Statement

The Examiner has objected to the Information Disclosure Statement (IDS) as failing to provide a legible copy of each foreign patent document or non-patent literature publication. Upon review of the electronic file history via the PAIR system, it is noted that, sometime after submission, the IDS was stamped "Items not received: 37 NPL." Applicants respectfully submit that legible copies of all references submitted in the IDS were submitted and received by the USPTO. This is evidenced by the stamped return receipt postcard (a copy of which is submitted herewith) acknowledging receipt of all 150 references. Nevertheless, Applicants respectfully resubmit the references, which the examiner crossed out in the List of Citations submitted with the IDS, in a Supplemental Information Disclosure Statement (SIDS). As each of these references was timely submitted with the original IDS, no additional fee should be charged for this SIDS.

Rejections under 35 U.S.C. § 112, Second Paragraph

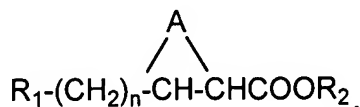
Claims 1-4, 7, 9, 12 and 13 are rejected as being indefinite as the type and substitution of the radioactive label are allegedly unclear. Claim 1 has been amended to recite "said analog further comprising a radioactive isotope that is bonded to a carbon atom of the analog." Support for this amendment can be found as described above. The types of radioactive isotopes that may be utilized in the invention are clearly described in the specification at, for example, page 13, lines 3-

4. Similarly, one of skill in the art would readily recognize the possible points of substitution for a given fatty acid and a given radioactive isotope and would be able to produce such radioactively labeled fatty acids analogs using the synthetic methods described in the specification. (See, e.g., Examples 1 and 8 and Figures 1 and 9). Applicants submit that claim 1 presented herein, and the claims depending therefrom, are sufficiently clear and, therefore, respectfully request reconsideration and withdrawal of the rejection.

Claims 11 and 54 are rejected as lacking sufficient antecedent basis for the limitation "said radioactive isotope". Claim 1 has been amended to recite "said formula being further substituted with a radioactive isotope". Claim 44 has been amended to recite "X=radioactive isotope". Support for these amendments can be found as described above. Applicants respectfully submit that claims 11 and 54 have clear antecedent basis for the term "said radioactive isotope." Therefore, Applicants respectfully request reconsideration and withdrawal of these rejections.

Rejections under 35 U.S.C. § 102

Claims 1-4, 7, 9, 11-13, 17 and 119 stand rejected under 35 USC §102(b) as being anticipated by International Patent Publication No. WO 97/19705 to Elmaleh ("Elmaleh"). Elmaleh teaches a fatty acid imaging agent containing a radionuclide in spatial proximity to the stereocenter along the carbon chain of the formula



Applicants respectfully traverse the rejection. Claim 1 has been amended to recite that "m is 1-10." That is, the carboxylic acid is not bound directly to the cyclic moiety in that it is at least one carbon away from the cyclic moiety. Support for this amendment can be found as described above.

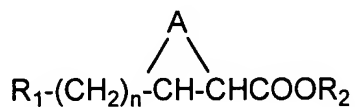
The genus of compounds disclosed by Elmaleh is limited to those wherein the -COOR₂ group is bound directly to the cyclic moiety. Indeed, none of the narrower genera, nor any of the specific compounds disclosed by Elmaleh, include a

compound where the -COOR_2 group is not bound directly to the cyclic moiety; i.e., wherein the -COOR_2 group is at least one carbon away from the cyclic moiety.

As such, Elmaleh does not teach each and element of the claims presented herein. Accordingly, Elmaleh does not anticipate the instant invention, and Applicants respectfully request reconsideration and withdrawal of the rejection.

Rejections under 35 U.S.C. § 103

Claims 1-4, 7, 8, 11-13, 17, 44-47, 50, 52, 119, 123 and 125 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Elmaleh, as described above, in view of United States Patent No. 4,323,547 to Knust, *et al.* ("Knust"). Elmaleh teaches a fatty acid imaging agent containing a radionuclide in spatial proximity to the stereocenter along the carbon chain of the formula



Knust teaches fatty acids labeled with radioactive isotopes, in particular $[\text{}^{18}\text{F}]$ -fluoroheptadecanoic acid, and their use in methods of investigating the kinetics of myocardial metabolism.

The Examiner alleges that it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Knust by using a $[\text{}^{18}\text{F}]$ -fluoroheptadecanoic acid as the carbon backbone in Elmaleh. Applicants respectfully disagree and traverse this rejection.

To properly determine a *prima facie* case of obviousness, the Examiner "must step backward in time and into the shoes worn by the hypothetical 'person of ordinary skill in the art' when the invention was unknown and just before it was made." M.P.E.P § 2142. This is important as "impermissible hindsight must be avoided and the legal conclusion must be gleaned from the prior art." *Id.*

Three basic criteria must then be met: first, there must be some suggestion or motivation to modify or combine the cited references; second, there must be a reasonable expectation of success; and third, the prior art references must teach or

suggest all the claim limitations. M.P.E.P §2143. With regard to the first criterion, the "mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination." M.P.E.P §2143.01 (citing *In re Mills*, 916 F.3d 690 (Fed. Cir. 1990)). "Knowledge in the prior art of every element of a patent claim ... is not of itself sufficient to render claim obvious." *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966); *Teleflex, [Inc. v. Ficoso N. Am. Corp.]*, 299 F.3d 1313, 1333-34 (Fed. Cir. 2002)]. The issue is whether substantial evidence supports the judgment (under the clear and convincing evidence standard) that a person having ordinary skill in the art would not have been motivated to replace the [prior art] combination ... with [the claimed combination.]" *Abbott Laboratories v. Syntron Bioresearch, Inc.*, 334 F.3d 1343, (Fed. Cir. 2003).

The present invention describes in detail, the beta-oxidation step which allows the analog to be metabolically trapped in the tissue. In order for this beta-oxidation step to occur, the cyclic moiety is at least 1 carbon atom away from the carboxylic acid.

As mentioned above, the genus of compounds disclosed by Elmaleh is limited to those wherein the -COOR_2 group is bound directly to the cyclic moiety. Nothing in Elmaleh teaches or suggest modifying the compounds to increase the number of carbon atoms between the -COOR_2 group and the cyclic moiety. Thus, at the time of the invention, one of skill in the art would have lacked the motivation to modify the compounds of Elmaleh to provide for beta-oxidations and thereby increase the ability of the analog to become trapped in bodily tissue.

Knust does not rectify the deficiencies of Elmaleh. Indeed, while Knust teaches the use of mid-chain, ^{18}F labeled fatty acids with chain lengths of at least 15 carbon atoms, Knust does not teach or suggest the inclusion of a cyclic moiety at least one carbon atom away from the carboxylic acid thereby allowing a beta-oxidation reaction to occur, thus trapping the labeled analog in bodily tissue.

At best, modifying the compounds of Elmaleh with the chain lengths and labeling positions of Knust to obtain the claimed compounds may be "obvious to try," however, it has long been established that this is not the standard of 35 U.S.C. § 103. *In re Geiger*, 815 F.2d 686, 655 (Fed. Cir. 1987). Indeed, even if one were to modify the compounds of Elmaleh with the chain lengths and labeling positions of Knust, one of skill in the art, without resorting to impermissible hindsight, would lack the motivation to increase the distance between the carboxylic group and the cyclic moiety to provide for beta-oxidations and to increase the ability of the analog to become trapped in bodily tissue.

Moreover, even if one were motivated to combine the cited references, the combination of references still would not provide one of ordinary skill in the art with a radioactively labeled analog in which the cyclic moiety is at least 1 carbon atom away from the carboxylic acid. In other words, the combination of references fails to teach or suggest all the claim limitations

Accordingly, Applicants respectfully request reconsideration and withdrawal of all rejections under 35 U.S.C. § 103 of claims 1-4, 7, 8, 11-13, 17, 44-47, 50, 52, 119, 123 and 125.

Conclusion

In view of the amendments and remarks made herein, Applicants respectfully request favorable reconsideration and withdrawal of all pending objections and allowance of the application. If a telephone conference with Applicants' representative would be helpful in expediting prosecution of the application, the Examiner is invited to call the undersigned at the telephone number indicated below.

Applicants do not believe that any fees are required for consideration and entry of this Amendment and Response. Nevertheless, the Director is authorized to charge any required fee or credit any overpayment to Deposit Account No. 04-1105 under order number 62041(51588).

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Respectfully submitted,

By



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